Government of Newfoundland and Labrador
Department of Education
Division of Evaluation and Research

TRENDS IN EDUCATION
Demographic Projections
Part 1

July, 1986

Authorized by the Minister

TRENDS IN EDUCATION:

PART I

DEMOGRAPHIC PROJECTIONS

Division of Evaluation and Research
Department of Education
Government of Newfoundland and Labrador

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PREFACE

The Department of Education places a high priority on comprehensive and systematic planning. Planning provides the overall direction for education through the development of broad policies and objectives. Efforts of educators to develop plans encounter many difficulties. An appreciation, therefore, of the direction of demographic and fiscal trends in education is essential if educators are to formulate plans and make decisions for the future.

Against this background the need exists for detailed information on education trends for the next decade. This paper is the first in a series of studies' intended to provide such information. Since fiscal considerations, policy initiatives and program plans are, to a large degree, influenced by demographic conditions, the first paper will provide projections of populations and student enrolments. The second paper will focus on the future demand for teachers and will provide forecasts of demands in specialized areas and in geographic regions. It will be available in the Fall of 1986. The third paper will provide economic trends and fiscal projections for various educational components. It will be available in the first quarter of 1987.

If information is required on this or any other publication, readers are encouraged to contact the following: Department of Education, Division of Evaluation and Research, Research and Statistics Section, P.O. Box 4750, St. John's, Nfld., A1C 5T7 (709) 576 2990.

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I INTRODUCTION

During the 1970's declining enrolments, a catchword among educators, became analogous in generic terms to declining growth. Growth, not so much in direct economic terms, the expenditures for education having risen from $75.6 million to $379.1 million during the seventies, but growth in social, demographic and educational terms. Consolidation, centralization and closure became the tools; leadership, motivation and morale became the concerns.

School enrolments declined from a high of 162,818 students in 1971 to 142,332 in 1985, a drop of 12.6 percent. During this period, the provincial population increased by 10.4 percent from 530,000 to 584,900. The school population as a percentage of the total population thus declined from 30.0 percent to 24.3 percent. An additional year of schooling in 1983-84 slowed the enrolment decline considerably; consequently, in real terms it dropped to 22.7 percent.

This study raised a number of questions relating to population trends and future growth. Will population trends continue? Will births continue to decline? Will elementary school enrolments begin a long awaited rise? Will migration, emanating from offshore development, significantly impact provincial enrolments?

The purpose of this paper is to present demographic information about past trends and to provide an overview of the educational changes which might occur. Projections have been developed for each of the next ten years. At the outset, however, it should be stated that projections simply indicate the direction and magnitude of possible developments based on past trends and present circumstances. They reflect an assumption that the past will prevail and will hold as long as certain conditions continue.

II DEMOGRAPHIC CHANGE

For a number of years studies in the U.S. and Canada have predicted a reversal of the decline in the number of school age children and a general increase beginning in the mid 1980s.[1] Recent data indicate that an upturn throughout North America is already in evidence. Between 1977 and 1982, for example, the annual number of births in the U.S. rose by 11.3 percent, and in Canada the annual number of births rose by 3.2 percent. Yet, in Newfoundland, the number of births declined by 17.4 percent during that same period.

Population Characteristics

The population of the Province has aged significantly during the last twenty years. For example, the pre school population decreased by 27.1 percent while the 55 plus age group increased by 62.4 percent. This aging will continue for some years to come as the echo effects of the *baby boom* transform into an *elder boom.*

The total population of the Province will continue to grow primarily due to the effects of population momentum. Momentum is the phenomenon which, despite declining growth rates, populations continue to grow for many years after fertility drops below replacement levels. Table 1 on the next page outlines the actual and projected population figures for the Province for ten year intervals from 1961 to 2001 inclusive. It is clear from these figures that there has been and will continue to be marginal population growth due to population momentum. The under 35 age group, for example, will increase from 317,800 in 1961 to 325,500 by 2001; however, as a proportion of the total population, it will decline from 69.4 percent to 51.5 percent. The 35 plus age group, on the other hand, will grow 30.6 percent to almost half of the total population by the turn of the century.

TABLE 1

Percentage Distribution of the Population by Specified Age Groups for Census Years 1961, 1971 and 1981 with Projections for 1991 and 2001

		Actual			Projected	
		1961	1971	1981	1991	2001
0-4	(Pre-school)	14.8	11.8	8.7	8.3	7.2
5-19	(School Age)	36.6	36.9	31.9	24.9	22.7
20-34	(Early Working Age)	18.0	20.5	25.6	25.6	21.6
35-54	(Late Working Age)	19.3	18.0	18.9	24.9	29.9
55+	(Senior Years)	11.3	12.8	14.8	16.4	18.7
Actual Total (000's)		457.9	522.1	567.7	602.9	632.1

The last thirty years has also seen a significant shift in the rural/urban distribution of the population. Table 2 below shows that urban areas, in this case communities with a population of 5,000 or more, have undergone the largest increases. From 1951 to 1981 the population increased by 70.6 percent. The rural population, on the other hand, has been more volatile. It increased from 1951 to 1971 and then decreased. In percentage terms, it has decreased from 81.7 percent to 60.4 percent of the total population.

TABLE 2

URBAN/RURAL DISTRIBUTION OF THE POPULATION
BASED ON COMMUNITIES 5000 AND OVER FOR
1951, 1961, 1971 AND 1981

Designation	1951		1961		1971		1981	
	Total (000's)	%	Total (000's)	%	Total (000's)	%	Total (000's)	%
Urban	66.2	18.3	120.7	26.4	170.4	32.6	225.1	39.6
Rural	295.3	81.7	337.1	73.6	351.7	67.4	342.6	60.4
Total	361.4	100.0	457.9	100.0	522.1	100.0	567.7	100.0

Source: Census of Canada (1981 List of Communities includes: Channel Port aux Basques, Conception Bay South, Corner Brook, Gander, Grand Falls, Happy Valley-Goose Bay, Labrador City, Marystown, Mount Pearl, Stephenville, Windsor, and St. John's.)

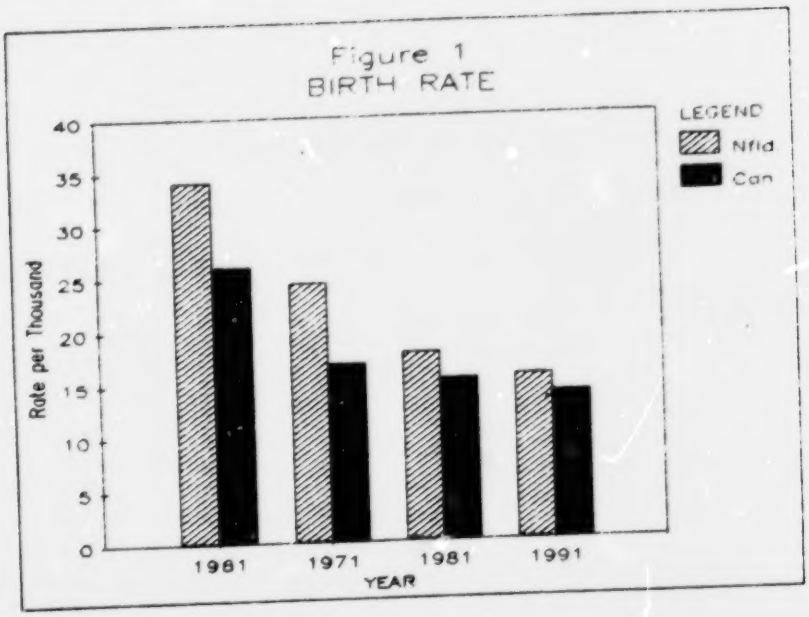


Figure 1
BIRTH RATE
LEGEND
Nfld
Can
Rate per Thousand
40
35
30
25
20
15
10
5
0
1961
1971
1981
1991
YEAR

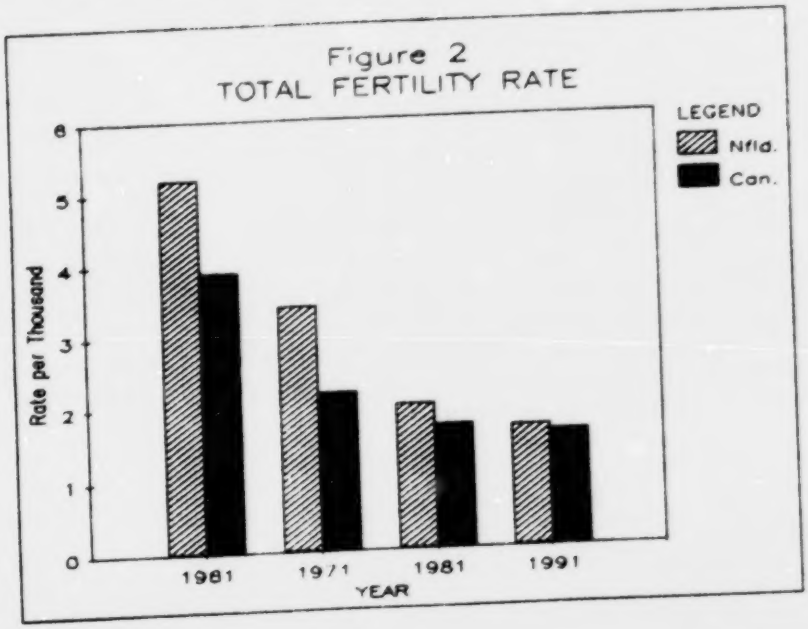


Figure 2
TOTAL FERTILITY RATE
LEGEND
Nfld.
Can.
Rate per Thousand
6
5
4
3
2
1
0
1981
1971
1981
1991
YEAR

Natural Increase

The number of births in the Province has been declining since it peaked at 15,591 in 1961. Estimates for the current year (1986) project the number of births to drop below 9,000 for the first time since 1943. This pattern is explained, in part, by falling birth rates. In 1961 the rate of births per 1000 population was 34.1 and has since dropped to an estimated 15.7 in 1984. It is projected to drop even further to 14.2 by 1991.

The decrease in the number of births is also linked to fertility. The fertility rate, a measure of the expected number of children per 1000 female population, has declined significantly from 4.55 (first measured in 1966) to an estimated 1.92 in 1984. For a number of years it has been below replacement level (2.1), and is projected to drop even further, reaching 1.65 in 1991.

The number of births is shaped by other trends as well. The number of families, for example, continues to increase and is expected to reach 145,000 by 1991. The number of females aged 15 44 has increased from 84,946 in 1961 to 142,400 in 1984, a result of the large numbers of births from the baby boom era. When this group begins to decline, as it will during the late 1990's, together with a continued decline or stablization of birth rates, there will be a steep decline in the number of births in this Province.

The average number of children per family, however, has been and will continue to decline significantly. It is projected that by 1991 the average number of children in each family will reach 1.62. This average, however, has been declining faster proportionally then the total school population. Between 1971 and 1986, for example, the number of parents with children in school rose from an estimated 130,000 to

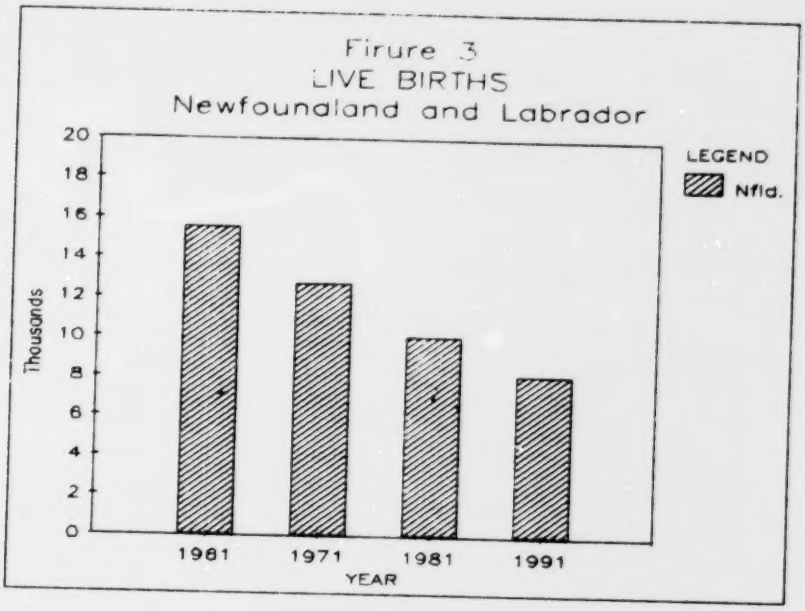
TABLE 3

Selected Demographic Information for Ten Year Period, 1974 to 1983

YEAR	Population		Births	Birthrate[1]		Birthrate[2]	
	Total	Female[3]		Nfld.	Can.	Nfld.	Can.
	(000's)	(000's)					
1974	541.5	114.5	11,504	21.2	15.6	2.67	1.88
1975	549.1	118.3	11,213	20.4	15.8	2.49	1.85
1976	557.7	122.2	11,130	20.0	15.7	2.37	1.82
1977	559.8	124.3	10,770	19.8	15.5	2.32	1.81
1978	561.5	126.3	10,301	18.7	15.3	2.14	1.76
1979	563.5	128.7	9,993	18.0	15.5	2.08	1.76
1980	565.6	131.5	9,602	17.4	15.5	2.09	1.75
1981	567.7	134.3	9,639	17.1	15.3	2.03	1.70
1982	568.5	136.1	9,507	16.9	15.1	1.97	1.69
1983	576.0	140.2	9,438	16.6	15.0	1.93	1.68

1 Rate of births per 1000 population
2 Rate of expected number of children per 1000 female population.
3 Female population (15-44)

Sources: Statistics Canada, *Population by Age Groups and by Sex*; Department of Health, Division of Statistics, *Registration at Birth* (1974-76), *Hospital Morbidity File* (1977-1983)


Firure 3
LIVE BIRTHS
Newfounaland and Labrador
LEGEND
Nfld.
Thousands
20
18
16
14
12
10
8
6
4
2
0
1961
1971
1981
1991
YEAR

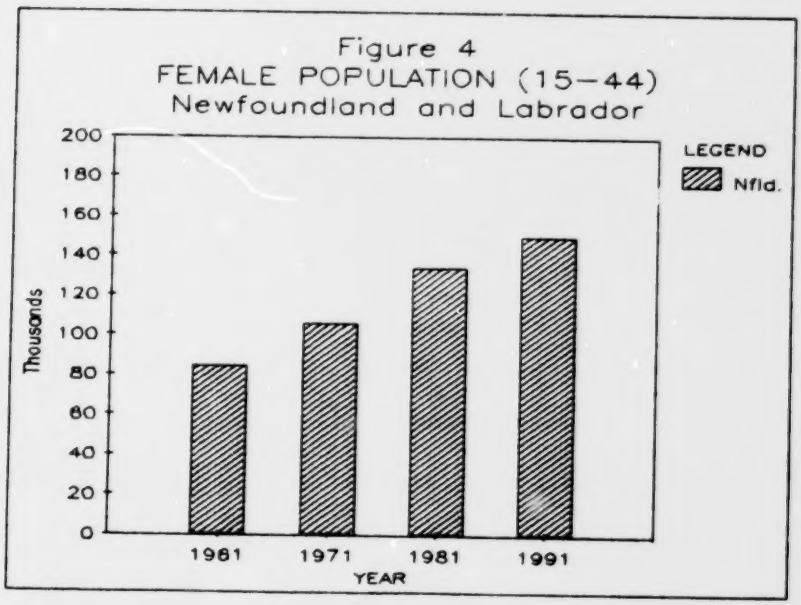


Figure 4
FEMALE POPULATION (15–44)
Newfoundland and Labrador
LEGEND
Nfld.
Thousands
200
180
160
140
120
100
80
60
40
20
0
1961
1971
1981
1991
YEAR

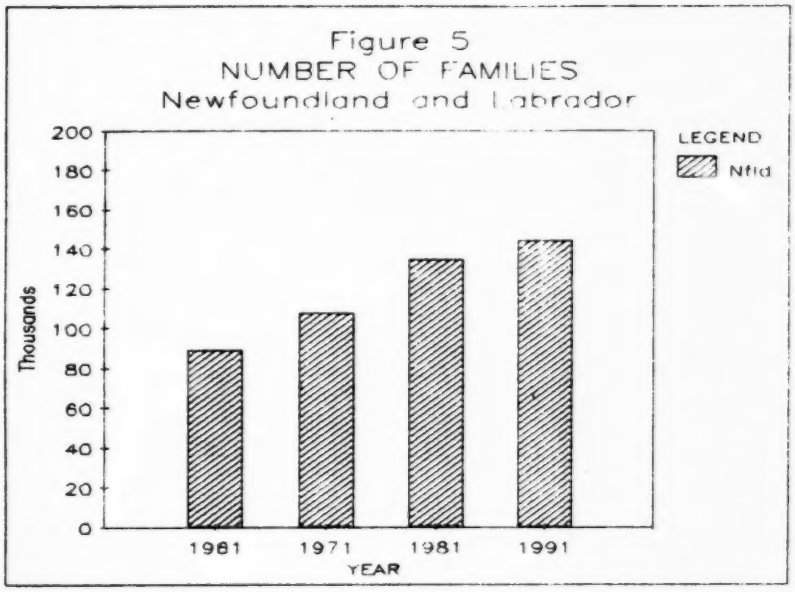


Figure 5
NUMBER OF FAMILIES
Newfoundland and Labrador
LEGEND
Nfld
Thousands
200
180
160
140
120
100
80
60
40
20
0
1961
1971
1981
1991
YEAR

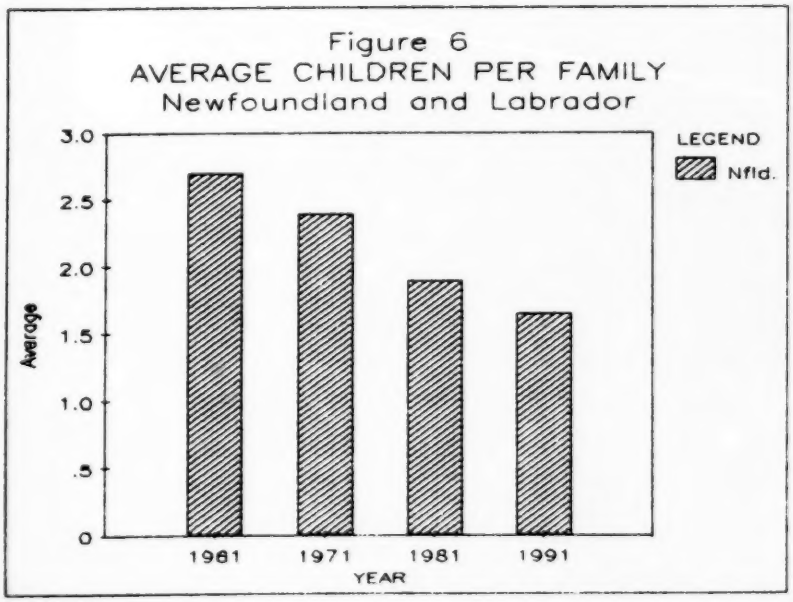


Figure 6
AVERAGE CHILDREN PER FAMILY
Newfoundland and Labrador
LEGEND
Nfld.
Average
3.0
2.5
2.0
1.5
1.0
.5
0
1961
1971
1981
1991
YEAR

150,000. What this means, at least in the short term, is that the political constituency in education is increasing.

The consequence of these changes is that the number of births in the coming years will continue its downward path. Unless there is a significant change in the attitudes toward children and family size and in the socio-economic condition of the Province, the number of births is expected to reach 7,700 by the year 1991, and 6,800 by 2001.

Mortality rates for young people have been quite low. So low, in fact, that the net effect of a reduction would have little effect on the size of the total provincial enrolment. Total infant death rate in Canada (8.1 per 1,000 live births in 1984) is among the lowest in the world. Only a significant change could influence the pre-school population and primary school enrolments.

Migration

Migration is another important factor in the examination of population growth. Throughout much of its history, Newfoundland has endured a subtle movement of its citizens out of the Province primarily to other parts of the country. Consequently, population trends arising from natural increase are entangled with, and frequently masked by, migration.

Table 4 on the following page, presents the net interprovincial migration of citizens and children for each of the last twenty years. With few exceptions, the Province regularly experienced a net loss of both children and adults. During the 1960's the losses were consistently high; however, in recent years, little linear trend is apparent.

TABLE 4

NET INTERPROVINCIAL MIGRATION OF CHILDREN AND ADULTS
1966 TO 1985

YEAR[1]	NET MIGRANTS[2]		YEAR[1]	NET MIGRANTS[2]	
	Children Only	All Citizens		Children Only	All Citizens
1966	-2465	-4539	1976	+210	+592
1967	-2052	-4435	1977	-907	-4149
1968	-1435	-2193	1978	-1181	-4311
1969	-949	-1278	1979	-912	-3374
1970	-3445	-7734	1980	-614	3597
1971	-1795	-3704	1981	-803	-3552
1972	-257	+910	1982	-1606	-5693
1973	-886	-537	1983	+220	+1829
1974	-871	-3316	1984	-845	-2444
1975	+236	+495	1985	-971	-3543

1 The data are compiled for years from July 1 to June 30; thus, 1966 refers to 1965-66.

2 A negative sign (-) refers to net out migration while a positive sign (+) refers to net in migration.

Sources: Statistics Canada; (1) *Interprovincial and International Migration of Children in Canada*, and (2) *Inmigration, Emigration and Interprovincial Migration*.(91-208)

The characteristics of those who move to the Province provide important information. In 1981 the Newfoundland Statistics Agency[3] surveyed 1,900 in-migrants in an attempt to understand who they are and why they are moving to Newfoundland. It was found that, of the 53 percent who responded, in migrants included people who were:

(1) originally from the Province;
(2) on average younger;
(3) on average better educated;
(4) coming for job related reasons; and
(5) more likely to reside in urban areas.

Migration will be affected, to some degree, by offshore petroleum development. The magnitude of its impact has yet to be determined, but in similar large scale development projects[4] migration was not seen as a major influence. In-migrants in those cases were found to be male, young (under 45), married, and better educated, more highly skilled and earn more income than the local citizens. Large-scale projects were usually built in resource rich, sparsely populated areas with extensive use of local labour and skills.

In the case of offshore Newfoundland and Labrador, the geographical areas which are chosen for development will largely determine the extent of migration. If local communities cannot supply all of the required personnel then development will affect a much larger geographical base. It is expected that only higher skilled, technical and managerial personnel will be imported. Other influences such as economic climate, recruitment policies, and skill requirements will affect the degree of speculative in migration.

The proposed NATO Base for Goose Bay, Labrador, if approved, will significantly impact that area. It is projected that the population will double from 7,000 to 14,000 within several years. What has yet to be determined is the extent to

which private schools will be established within the base itself.

Three assumptions relating to migration were proposed for this study: (1) that large-scale in-migration related to offshore development will not begin for three to five years or longer; (2) that migration will be confined to local areas; and (3) that migration of school-age children will be minimal and confined to urban centers.

III. ENROLMENT TRENDS

During the forty year period from 1951 to 1981, a rather volatile pre school age group jumped from 58,800 to 68,500 and then dropped to 49,400. This roller coaster effect has been the single, largest contributing factor to the change in school enrolments. With births projected to decline to 7,700 by 1991, the pre-school age group could drop to 40,000.

An examination of the composition of school age enrolments indicates a high correlation between it and the population by single years of age. Table 5 on the following page presents age specific attendance ratios for census years 1971 and 1981. It shows a significant correlation between the two for ages 5 to 14 inclusive. Age 15 appears to be an anomaly since it is a compulsory age, yet, only 91 percent of the students attend. For ages 16 through 18 the attendance ratios drop significantly.

Enrolment by grade for the last twenty years indicate that, with the exception of senior high, all grades have declined considerably. Kindergarten through Grade 7, for example, have each decreased by over 20 percent. High school grades have stabilized somewhat primarily due to the effects of population momentum and the introduction of Grade 12. Special Education enrolment, on the other hand, has increased by 38.3 percent, thus contributing to the decline in regular school programs.

While enrolments have been declining there has been a significant upward extension of the education system. For example, secondary grades as a proportion of the total enrolment increased from 34.4 percent in 1966 to 45.2 percent in 1986. In addition, there has been a significant improvement in the ability of schools to retain students. The results of an examination of three different student cohorts moving from Grade 2 to Grade 11 is shown in Table 7. In 1966, for example, the number of students

TABLE 5

Numerical Cross Classifications of Population and Enrolment For Single Years of Age for Census Years 1971 and 1981

AGE	1971			1981		
	Population	Enrolment	Ratio	Population	Enrolment	Ratio
5	13,585	14,806	1.090	10,915	10,427	.955
6	13,795	13,473	.977	10,980	10,885	.991
7	13,455	13,593	1.010	11,065	10,984	.993
8	13,525	13,583	1.004	11,645	11,321	.972
9	13,335	13,317	.999	12,145	11,907	.980
10	13,455	13,308	.989	12,185	12,229	1.004
11	13,105	13,145	1.003	12,100	11,895	.983
12	13,035	13,105	1.005	12,140	12,243	1.008
13	12,945	12,879	.995	12,425	12,259	.987
14	12,680	12,571	.991	12,615	12,313	.976
15	12,790	11,719	.916	13,385	12,163	.909
16	12,695	9,369	.738	13,545	10,921	.806
17	12,430	5,282	.425	13,000	4,160	.320
18	11,405	2,668	.234	11,915	1,478	.124

Sources: (Population) Statistics Canada, *Population by Age Groups and by Sex*; (Enrolment) Newfoundland, Department of Education, *Directory of Schools*.

TABLE 6

ENROLMENT BY GRADE, 1976-1977 to 1985-1986

YEAR	PRIMARY				ELEMENTARY			JUNIOR HIGH			SENIOR HIGH[1]				Spec. Educ.	Comm.	TOTAL
	K	1	2	3	4	5	6	7	8	9	1st	2nd	3rd	4th			
1976-77	12,782	12,626	12,598	12,685	12,997	13,508	13,774	14,310	13,179	12,566	10,469	9,003	32	-	6,633	130	157,682
1977-78	12,521	12,913	12,314	12,714	12,633	12,760	13,367	14,025	13,233	12,565	10,741	9,377	39	-	6,837	123	156,162
1978-79	11,814	12,195	12,385	12,181	12,511	12,478	12,811	13,860	13,157	12,726	10,564	9,491	57	-	6,779	164	153,174
1979-80	11,457	11,549	11,932	12,415	12,120	12,498	12,402	13,164	13,130	12,379	11,047	9,218	43	-	6,835	193	150,382
1980-81	11,222	11,318	11,319	11,930	12,381	12,139	12,302	12,696	12,528	12,537	10,930	9,708	37	-	7,292	194	148,533
1981-82	10,661	11,019	10,959	11,194	11,695	12,210	11,915	12,519	12,307	11,713	10,887	10,128	59	-	7,763	158	145,185
1982-83	10,556	10,534	10,763	10,893	11,091	11,565	12,133	12,272	12,132	11,654	10,300	10,083	76	-	8,277	158	142,517
1983-84	9,823	10,446	10,165	10,629	10,740	11,012	11,548	12,523	11,872	11,568	10,311	9,530	8,903	-	8,533	-	147,603
1984-85	9,902	9,572	10,045	10,124	10,552	10,466	10,889	12,110	12,026	11,203	10,358	9,590	8,687	796	8,796	-	145,216
1985-86	9,375	9,642	9,296	9,837	9,924	10,374	10,404	11,383	11,639	11,549	10,279	9,726	8,599	1,134	9,171	-	142,332
% Change[2]	-26.7	-23.6	-26.2	-22.5	-23.6	-23.2	-24.5	-20.5	-11.7	-8.1	-1.8	+8.0	-	-	+38.3	-	-9.7

1 Years 1 to 3 correspond to Grades 10 through 12 respectively.

2 Percentage change from 1976-77 to 1985-86.

Source: Department of Education, Division of Evaluation and Research

TABLE 7

ENROLMENT CHANGE FROM GRADE 2 TO GRADE 11
FOR YEARS 1957 TO 1966, 1967 TO 1976 AND 1977 TO 1986

YEAR	GRADE 2	GRADE 11	CHANGE
1956-57	13,364		
1965-66		5,750	43.0%
1966-67	14,835		
1975-76		9,139	61.6%
1976-77	12,598		
1985-86		9,726	77.2%

Source: Department of Education,
Division of Evaluation & Research

registered in Grade 11 was 43.0 percent of the Grade 2 enrolment nine years earlier. By 1986 that proportion had increased to 77.2 percent. In other words, within twenty years the number of students who were either leaving school or leaving the Province had been reduced by 60.0 percent

Trends in Special Education Services

Since the mid 1960s the number of students enroled in special education programs has grown arithmetically. Fewer than 100 students were involved in 1965; however, by 1986 there were 9,171 students placed in special classes or provided with special services.

The types of services now provided, in addition to regular special education programs, include programs for trainable mentally retarded students, behaviorally disturbed students, hearing impaired students, visually impaired students, and, multi-handicapped students. In addition, support services are provided in the form of educational psychologists and speech/language pathologists.

There is not expected to be significant increases in the number of students for which services will be required. Expansion and growth will be tied to quality of services rather than quantity of services. In this regard, a 2 percent per year increase is projected. New policy initiatives, however, for gifted students and in the area of remediation may alter these projections in the coming years.

TABLE 8

NUMBER OF SCHOOLS, TEACHERS AND ENROLMENT IN
EARLY AND LATE FRENCH IMMERSION PROGRAMS FROM 1975-76 TO 1985-86

YEAR	EARLY IMMERSION			LATE IMMERSION			TOTAL		
	Schools	Teachers[1]	Enrolment	Schools	Teachers	Enrolment	Schools	Teachers[1]	Enrolment
1975-76	1	-	30				-1	-	30
1976-77	1	-	56				-1	-	56
1977-78	2	-	95				-2	-	95
1978-79	3	-	193				-3	-	193
1979-80	3	-	250	1	1	29	4	-	279
1980-81	3	-	333	1	2	59	4	-	392
1981-82	5	-	468	1	3	83	6	-	551
1982-83	8	-	641	2	4	101	10	-	742
1983-84	9	39	852	2	4	118	11	43	970
1984-85	13	55	1,264	3	6	173	16	61	1,437
1985-86	19	75	1,782	3	8	233	22	83	2,015

[1] Unavailable prior to 1983-84

Trends in French Language Services

The 1980s has seen a paradigm shift in the area of French language services. Since the first French Immersion program was introduced in 1975-76, enrolments have increased on average by 54.1% per year. In 1985-86, enrolment had grown to 2,015 students or 1.42% of the total school population. Yet, because it remains in an embryonic stage, primary enrolments are disproportionately high. For example, Kindergarten enrolment in 1985-86 was 540 or 5.76% of the total Kindergarten population.

Future expansion is dependent upon the will of the people, the ability of school boards to offer adequate programs, and the fiscal condition of the Province. The future will see a continued expansion in French language services, although the rate of expansion will be less dramatic. One new initiative being considered for the future is French language remediation.

Even with minimal expansion, the effects of *demographic momentum* will cause enrolments to increase geometrically for many years to come. If one or two more classes are added each year, by 1990 91 the enrolment could reach 5,500 or 5 percent of the total enrolment of the Province.

IV. METHODOLOGY

Enrolments were projected for students in Grades 1-12 inclusive and special education programs. The number of high school graduates was also projected. A macro level approach, which developed provincial projections and then partitioned enrolments into individual regions, was utilized. Although there are advantages to a micro level approach the inability to get accurate and reliable input data made this approach undesirable.

A brief summary of the methodology, the steps involved, and the assumptions applied is presented. If further detail is required, however, readers are encouraged to contact the Division of Evaluation and Research, Department of Education.

The methodology used was grade specific. It produced survival rates for each grade or level over time. For example, a proportion of students enroled in a particular grade g in year t, referred to as E_{gt}, survive to grade E_{g+1} and are referred to as $E_{(g+1)(t+1)}$. The survival rate (S) can be summarized as follows:

$$S_{g,g+1} = \frac{E_{(g+1)(t+1)}}{E_{gt}} \times 100$$

The rates, based on past trends, related information and assumptions about future conditions, were then projected for the forecast period. Most of the rates were linear in nature and were projected using regression techniques. While the actual figures may have oscillated from grade to grade and year-to-year, the rates surrounding these figures maintained linearity.

The steps which were used are outlined on the next page.

STEPS

Step 1 Population information was obtained from the Newfoundland Statistics Agency, Executive Council, Government of Newfoundland and Labrador.

Step 2 Fertility rates were projected for the forecast period based on assumptions about family size, mortality and regional differences.

Step 3 Births were calculated based on assumptions about fertility rates, mortality and migration.

Step 4 Education participation rates, defined as the survival rate from birth to Kindergarten, were calculated based on available birth information and assumptions about mortality and migration.

Step 5 Kindergarten enrolments were calculated based on projected education participation rates.

Step 6 Grade specific survival rates were calculated based on available enrolment information and assumptions about retention, mortality and migration.

Step 7 Grade enrolments were calculated based on projected grade specific survival rates.

Step 8 Special education and French Immersion enrolments were calculated utilizing an abridged Delphi technique .

Step 9 High school graduation rates were calculated based on available public examination data and assumptions about retention, mortality and migration.

Step 10 High school graduates were calculated based on high school graduation rates.

Step 11 Total enrolments were summarized.

Assumptions

One of the most difficult tasks in developing projections is the advancement of assumptions which are well-founded and supported by the available data. Some of the major assumptions used in this study are included below:

1. The number of families will continue to increase significantly, reaching 145,000 by 1991, stabilize, and then decline by the mid 1990's.

2. The average number of children per family will decline to 1.65 by 1991.

3. Even though the increase in the female population (15-49) has offset, to some degree, the decline in fertility rates, by the mid-1990's the number of births will decline significantly.

4. Mortality rates will remain constant.

5. There will continue to be more people who choose to move out of the Province then who choose to move in.

Assumptions relating to the effects of offshore development are included on page 13.

TABLE 9

BIRTHS, GRADUATES AND ENROLMENT BY GRADE BY YEAR, 1976-77 to 1985-86

YEAR	ENROLMENT																TOTAL
	Births[1]	K	1	2	3	4	5	6	7	8	9	10	11	12	Spec. Educ.	Grad.[2]	
1985-86	9602	9375	9642	9296	9837	9924	10374	10404	11383	11639	11549	10279	9726	9733	9171	-	142,332
1984-85	9993	9902	9572	10045	10124	10552	10466	10889	12110	12026	11203	10358	9590	9483	8796	7112	145,116
1983-84	10301	9823	10446	10165	10629	10740	11012	11548	12523	11872	11568	10311	9530	8903	8533	6794	147,603
1982-83	10770	10556	10534	10763	10893	11091	11565	12133	12272	12132	11654	10300	10083	76	8277	3	142,517
1981-82	11130	10661	11019	10959	11194	11695	12210	11915	12519	12307	11713	10887	10128	59	7763	6772	145,185
1980-81	11213	11222	11318	11319	11930	12381	12139	12302	12696	12528	12537	10930	9708	37	7292	6566	148,533
1979-80	11504	11457	11549	11932	12415	12120	12498	12402	13164	13130	12379	11047	9218	43	6835	6178	150,382
1978-79	12901	11814	12195	12385	12181	12511	12478	12811	13860	13157	12726	10564	9491	57	6779	5859	153,174
1977-78	12898	12521	12913	12314	12714	12633	12760	13367	14025	13233	12565	10741	9377	39	6837	5428	156,162
1976-77	12767	12782	12626	12598	12685	12997	13508	13774	14310	13179	12566	10469	9003	32	6633	5522	157,682

1 Those born five years earlier.
2 Total number of students who successfully completed public exams (June and Supplementary).
3 No graduates in school year 1982-83.

TABLE 10

EDUCATION PARTICIPATION RATES

Births		Enrolment		RATIO
Year	Number	Year	Number	
1985[1]	8967	1990-91	-	-
1984	9043	1989 90	-	-
1983	9438	1988 89	-	-
1982	9507	1987 88	-	-
1981	9639	1986 87	-	-
1980	9602	1985-86	9375	.976
1979	9993	1984 85	9902	.991
1978	10301	1983-84	9823	.954
1977	10770	1982-83	10556	.980
1976	11130	1981-82	10661	.958
1975	11213	1980-81	11222	1.001
1974	11504	1979 80	11457	.996
1973	12901	1978-79	11814	.916
1972	12898	1977 78	12521	.971
1971	12767	1976-77	12782	1.001

[1] Preliminary

Sources: Department of Education, Division of Evaluation and Research; and Department of Health, Division of Statistics (1) 1971-1976 Registration at Birth File, (2) 1977-1985 Hospital Morbidity File.

TABLE 11
GRADE SPECIFIC SURVIVAL RATES BY YEAR

YEAR[1]	GRADE SURVIVAL RATES														TOTAL[2]
	1	2	3	4	5	6	7	8	9	10	11	12	Spec.[2] Educ.	Grad.[3]	
1984--86	97.37	97.12	97.93	98.02	98.31	99.41	104.54	96.11	96.03	91.75	93.90	101.49	4.26	-	-1.92
1983--85	97.44	96.16	99.60	99.28	97.45	98.88	104.87	96.03	94.37	89.54	93.01	99.51	3.08	75.00	-1.68
1982--84	98.96	96.50	98.76	98.60	99.29	99.85	103.21	96.74	95.35	88.48	92.52	88.30	3.09	76.31	3.57
1981--83	98.81	97.68	99.40	99.08	98.89	99.37	102.99	96.91	94.69	87.94	92.62	-	6.62	N/A	-1.84
1980--82	98.19	96.83	98.90	98.03	98.62	98.16	101.76	96.94	93.50	86.84	92.66	-	6.46	66.86	-2.25
1979--81	98.79	98.01	99.98	99.73	100.16	98.43	102.37	95.17	95.48	88.29	87.88	-	6.69	67.63	-1.23
1978--80	97.76	97.84	100.24	99.50	99.90	99.39	102.76	94.73	94.09	86.81	87.26	-	0.83	67.02	-1.82
1977--79	97.40	95.91	98.92	98.40	98.77	100.40	103.69	93.81	96.17	84.08	88.36	-	0.85	61.73	-1.91

[1] Two year span (e.g. 1984--86 = 1984-85 to 1985-86).
[2] Change from previous year.
[3] Change from Level III September enrolment to successful completions in same year. Note that there were no graduates in 1982-83. Prior to that date rates applied to Grade 11.

V. FINDINGS

Rather than provide multiple assumptions followed by a range of outcomes, this study presents one only. It is a "most likely" scenario. One result is found to be less confusing and more practicable to users. While the multi-scenario approach may be more flexible in the long run, users frequently adopt the middle ground.

A summary of the major findings in the study is presented below:

(1) Kindergarten enrolments will continue in a downward mode and reach approximately 7,700 by 1995;

(2) The number of primary students will decline on average by 1.64% per year;

(3) The number of elementary students will decline on average by 2.30% per year;

(4) The number of junior high students will decline on average by 2.36 per year;

(5) There will be minor variations in senior high enrolment, however, significant decreases will occur during the 1990s;

(6) The number of senior high students will decline on average by 1.93% per year;

(7) The number of students in Special Education programs will increase to 11,000 students by 1995;

(8) The number of students in French Immersion Programs will continue to increase on average by 25% to 30% per year for at least the next five years.

(9) The number of students graduating from high school will continue to increase for several years and then decline; and,

(10) The total enrolment for the Province will continue to decrease annually.

TABLE 12

PROJECTED EDUCATION PARTICIPATION RATES
AND KINDERGARTEN ENROLMENTS

YEAR	BIRTHS	PARTICIPATION RATE	KINDERGARTEN ENROLMENT
1986-87	9639*	.9748	9396
1987-88	9507*	.9750	9269
1988-89	9438*	.9750	9202
1989-90	9043*	.9751	8819
1990-91	8967*	.9752	8745
1991-92	8700	.9752	8484
1992-93	8550	.9753	8339
1993-94	8450	.9754	8242
1994-95	8150	.9754	7950
1995-96	7900	.9756	7707

*Actual

TABLE 13
PROJECTED GRADE SPECIFIC SURVIVAL RATES, 1986-1990
BY YEAR

YEAR[1]	Grade Survival Rates													
	1	2	3	4	5	6	7	8	9	10	11	12	Spec. Educ.	Grad.[2]
1985--87	98.05	96.81	98.50	98.50	97.97	99.02	104.36	97.27	95.03	91.66	95.39	98.00	102.00	76.34
1986--88	98.05	96.77	98.35	98.43	97.76	98.97	104.60	97.59	95.04	92.48	96.36	98.00	102.00	77.01
1987--89	98.04	96.73	98.19	98.36	97.55	98.93	104.87	97.92	95.05	93.31	97.33	98.00	102.00	77.68
1988--90	98.03	96.68	98.03	98.29	97.33	98.88	105.08	98.24	95.07	94.13	98.30	98.00	102.00	78.35
1989--91	98.02	96.64	97.87	98.21	97.12	98.83	105.32	98.57	95.08	94.95	99.26	98.00	102.00	79.02
Correlation (r)	-.029	-.133	-.522	-.269	-.598	-.160	.560	.699	.037	.902	.881			
Standard Deviation	.687	.791	.743	.661	.869	.731	1.054	1.138	.952	2.232	2.695			
Intercept (b/a)	98.13	97.20	99.93	99.16	99.88	99.45	102.19	94.34	94.89	84.27	86.67			
Slope (a)	-.008	-.043	-.158	-.073	-.212	-.048	.241	.325	.015	.822	.969			

1 Two year span (e.g. 1985--87 = 1985-86 to 1986-87)
2 Assumed to increase to 79.00 in 1991 from the 1985 level of 75.00 (0.67 per year)

TABLE 14
PROJECTED GRADE SPECIFIC SURVIVAL RATES, 1991-1995

YEAR[1]	Grade Survival Rates													
	1	2	3	4	5	6	7	8	9	10	11	12	Spec. Educ.	Grad.[2]
1990--92	97.91	96.84	97.68	98.10	96.87	98.63	105.51	98.89	95.09	95.06	99.00	98.00	102.00	79.62
1991--93	97.89	96.88	97.52	98.02	96.65	98.53	105.71	99.25	95.11	95.32	99.00	98.00	102.00	80.22
1992--94	97.87	96.91	97.36	97.94	96.43	98.43	105.91	99.60	95.12	95.68	99.00	98.00	102.00	80.82
1993--95	97.85	96.95	97.20	97.86	96.22	98.33	106.11	79.95	95.13	95.92	99.00	98.00	102.00	81.42
1994--96	97.83	96.98	97.04	97.78	95.99	98.22	106.32	100.30	95.15	96.22	99.00	98.00	102.00	82.02
Correlation (r)	-.098	.339	-.689	-.522	-.769	.710	-.772	.909	.037	.572				
Standard Deviation	.484	.274	.569	.376	.693	.355	.639	.949	.952	.356				
Intercept (b/a)	98.08	96.52	99.12	98.82	98.83	99.56	103.70	95.72	94.89	94.87				
Slope (a)	-.109	.036	-.160	-.080	-.218	-.103	.201	.353	.015	.198				

[1] Two year span (e.g. 1990--92 = 1990-91 to 1991-92)

[2] Assumed to increase to R2.02 in 1996 from the 1991 level of 79.02 (0.60 per year).

TABLE 15

PROJECTED ENROLMENT BY GRADE, 1986-1987 to 1995-1996

	GRADE										LEVEL			Spec.	
	K	1	2	3	4	5	6	7	8	9	I	II	III	Educ.	TOTAL
1986 87	9396	9192	9334	9157	9689	9723	10272	10858	11072	11060	10586	9805	9532	9354	139031
1987-88	9269	9213	8895	9180	9013	9472	9623	10745	10596	10523	10229	10200	9609	9541	136108
1988-89	9202	9087	8911	8734	9029	8792	9371	10092	10479	10072	9819	9956	9996	9732	133272
1989 90	8818	9020	8785	8735	8585	8788	8694	9847	9914	9962	9481	9652	9757	9927	129965
1990-91	8745	8643	8717	8598	8579	8338	8685	9157	9706	9428	9459	9412	9459	10125	127051
1991-92	8484	8562	8370	8515	8435	8310	8224	9164	9055	9229	8962	9364	9224	10328	124226
1992-93	8339	8304	8295	8162	8346	8152	8188	8694	9095	8612	8797	8872	9177	10534	121567
1993-94	8242	8161	8047	8076	7994	8048	8024	8672	8659	8651	8240	8709	8695	10745	118963
1994-95	7950	8064	7912	7822	7963	7692	7914	8514	8668	8236	8298	8158	8535	10960	116686
1995-96	7707	7777	7820	7678	7648	7644	7555	8414	8540	8246	7925	8215	7995	11179	114343

TABLE 16

NUMBER OF HIGH SCHOOL GRADUATES,
1986-1987 to 1995-1996

YEAR	GRADUATES
1986-87	7277
1987-88	7400
1988-89	7765
1989-90	7645
1990-91	7475
1991-92	7344
1992-93	7361
1993-94	7027
1994-95	6949
1995-96	6558
TOTAL	72801

FOOTNOTES

1 See, for example, W. Clarke, M.S. Devereax and Z. Zigmond, *The Class of 2001*, Statistics Canada and Canadian Teachers' Federation, Ottawa, February, 1979; M.V. George and J. Perreault, *Population Projections for Canada, Provinces and Territories 1984 2006*, Statistics Canada, Ottawa, May, 1985; and, National Center for Education Statistics, *The Condition of Education*, Annual Statistical Report, U.S. Government Printing Office, Washington, 1985.

2 Newfoundland Statistics Agency, *Population Projections for Newfoundland and Labrador: 1983-2005*, Government Printing Office, St. John's, September, 1984.

3 Newfoundland Statistics Agency, *Survey of Migrants to Newfoundland and Labrador: 1980-81*, Government Printing Office, St. John's, May, 1982.

4 See, for example, L. Leistritz and S. Murdock, *Impact Management Measures to Reduce Inmigration Associated with Large-scale Development Projects*, North Dakota State University; S. Murdock, S-S. Hwang and R. Hamm, *Energy Related Inmigration: Characteristics and Impacts of Inmigrants into Energy-impacted Areas in the Eastern United States*, Texas A&M University; and, G. Rozon, *The Norman Wells Project: Migration-related Impacts*, Mackenzie Valley, Northwest Territories. Papers presented to Conference on Speculative Migration, St. John's, 1986.